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(HIR.166)

### REMARKS

Claims 1-19 are all of the claims presently pending in the application. Applicant has not amended the claims by the present response.

Claims 1-3, 6, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto (U.S. Patent No. 6,064,079) in view of Ikeda (U.S. Publication No. 2003/0059972). Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Ikeda and Fukuda (JP 2003-115610). Claims 7-10, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Ikeda and Kaneyama (U.S. Publication No. 2002/0014632). Claims 11-14, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Ikeda and Fukuda. Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Ikeda and Nomura (U.S. Publication No. 2003/0147440). Claim 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Ikeda and Ishikawa (U.S. Patent No. 4,987,096).

These rejections are respectfully traversed in the following discussion.

#### **I. THE CLAIMED INVENTION**

The invention of claim 1, for example, is directed to a group III-nitride-based compound semiconductor device, that includes a first p-layer and a second p-layer, the first p-layer and the second p-layer including an acceptor impurity, and an intermediate layer provided between the first p-layer and the second p-layer, wherein the intermediate layer contacts an entirety of the surface of the second p-layer and an entirety of the surface of the first p-layer, the first p-layer is formed on the light emitting layer, the intermediate layer is

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formed above the first p-layer, and the second p-layer is formed above the intermediate layer, and a band gap decreases from a position proximate to the light emitting layer to a position proximate the second p-layer (e.g., see Application at page 9, lines 1-5).

Accordingly, the intermediate layer exhibits low-conductivity due to doping of the donor impurity and, therefore, can offer an improved electrostatic withstand voltage while suppressing an increase in driving voltage. This effect results from the intermediate layer contacting the entire surface of the p-contact layer (or second p-layer) such that an applied voltage does not concentrate on a part of a p-electrode side but extends widely across the p-electrode side (see Application at page 6, line 14-page 7, and line 2).

## II. THE PRIOR ART REFERENCES

### A. The Alleged Combination of Yamamoto and Ikeda

The Examiner alleges that one of ordinary skill in the art would have combined Ikeda with Yamamoto to teach the claimed invention of claims 1-3, 6, and 17. Applicant submits, however, that the alleged combination of references does not teach or suggest each and every feature of the claimed invention.

That is, the alleged combination of references does not teach or suggest, “*wherein a band gap decreases from a position proximate to the light emitting layer to a position proximate the second p-layer*”, as recited in exemplary claim 1.

The Examiner concedes that Yamamoto does not teach or suggest the relative bandwidths of the p- layers and the light emitting layer (see Office Action dated November 28, 2008 at page 3).

The Examiner, however, alleges that Ikeda makes up the deficiencies of Yamamoto.

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Specifically, the Examiner alleges, "Ikeda teaches forming a light emitting device comprising a first p layer, an intermediate layer and a second p layer formed over a light emitting layer. Wherein the band gap decreases from a position proximate the light layer to a position proximate the second p layer (fig 11-13) (paragraph 32)." (See Office Action dated November 24, 2008 at page 3). The Examiner, however, is incorrect.

That is, Ikeda merely discloses a relationship between the band gap of the intermediate layer and other layers in the light emitting device. Ikeda, however, does not teach or suggest the specific relationship recited in the claimed invention.

Indeed, Ikeda merely teaches that an intermediate layer, disposed between a contact layer and a cladding layer, has a band gap energy, which is intermediate between the band gap energy of the contact layer and the cladding layer (see Ikeda at paragraph [0032]). Ikeda, however, does not explain whether the band gap energy increases or decreases with respect to a position of the light emitting layer.

Thus, Ikeda fails to make up the deficiencies of Yamamoto.

Therefore, Applicant submits that the alleged combination of references does not teach or suggest each and every feature of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

#### **B. The Secondary References**

The Examiner alleges that one of ordinary skill in the art would have combined Fukuda with Yamamoto and Ikeda to teach the claimed invention of claims 4, 5, 11-14, and 19. Furthermore, the Examiner alleges that one of ordinary skill in the art would have combined Kaneyama with Yamamoto and Ikeda to teach the claimed invention of claims 7-10

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and 18. Even further, the Examiner alleges that one of ordinary skill in the art would have combined Nomura with Yamamoto and Ikeda to teach the claimed invention of claim 15. Still furthermore, the Examiner alleges that one of ordinary skill in the art would have combined Ishikawa with Yamamoto and Ikeda to teach the claimed invention of claim 16. Applicant submits, however, that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention.

That is, Applicant submits that claims 4, 5, 7-16, 18, and 19 are allowable at least based on similar reasons as those set forth above with above, in section A, respect to claims 1-3, 6, and 17.

Therefore, Applicant submits that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to withdraw this rejection.

### III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submit that claims 1-19, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. Applicant respectfully requests the Examiner to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, Applicant requests the Examiner to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The undersigned authorizes the Commissioner to charge any deficiency in fees or to

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credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: December 30, 2008



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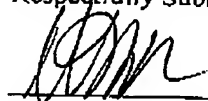
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**FACSIMILE TRANSMISSION**

I hereby certify that I am filing this paper via facsimile, to Group Art Unit 2818, at  
(571) 273-8300, on December 30, 2008.

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